

Glades Slough

Which habitat video: Slough

Subject: Science, Reading and Speaking and Listening

Duration: 1 Week

Group Size: 22

Setting: Classroom and school grounds

Grade: 4-5

Standards:

NGSSS - SC.5.L.17.1, SC.4.N.1.4, SC.4.N.1.1 and SC.5.N.2.1

Common Core – LACC.4.RI.3.9, LACC.5.RI.3.9 LACC.4.SL.2.4 and LACC.5.SL.2.4

Vocabulary: ecosystem, community, habitat, ecological niche, species, adaptation

Materials
<ul style="list-style-type: none">• Appendices A – C• Shallow container• Drawing paper, construction paper• Magazine picture, print outs

Objective(s):

Guiding Question: What are adaptations displayed by plants and animals?

Critical Content: To understand a typical aquatic habitat and the ecological niche.

Student Objectives: Students will...

- Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.
- Attempt reasonable answers to scientific questions and cite evidence in support.
- Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source), conduct both individual and team investigations through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.
- Recognize and explain that science is grounded in empirical observations that explanation must always be linked with evidence, analysis, reflection and research.
- Intergrade information from several texts on the same topic in order to write or speak about the subject knowledgeably.
- Report on a topic or text, tell a story, or recount and experience in an organize, using appropriate facts and relevant, descriptive details to support main idea or theme; speak clearly at an understandable pace

Method

The students will walk around the school grounds observing and jotting down any plants and animals that they see. After discussing their observations students design their own original creature that is adapted to its habitat. Students will categorize animals and plants from a list that has common freshwater plants and animals found in a freshwater slough in the Everglades; they will categorize based on group characteristics. They will watch a video of an Everglades slough and use the list to check animals and plants seen. Students will select an animal or plant to research; their research information needs to include adaptations used to survive. They will compare and contrast how these adaptations are used in the Everglades seasonal cycles of wet and dry. The students will then construct a 3-dimensional model of a freshwater slough found in the Everglades.

Background

The plants and animals of the park are organized into communities or populations of different organisms living and interacting together in particular locations (e.g., an estuary or a freshwater slough). A community or group of communities together with the non-living components of the environment (water, air, soil and sunlight) comprises an ecosystem. (An ecosystem can be as small as a spoonful of water or as large as an entire watershed.)

The place in the ecosystem where a species lives is called its habitat. Some habitats are terrestrial, on dry land (e.g., a hardwood hammock- dominated by hardwoods growing on slightly elevated ground; others are aquatic, in water (e.g., and alligator hole or slough). The ecological niche of a species is its way of life or role that it plays in the community. An ecological niche is defined by such things as the diet of the species, its nesting and feeding behavior, the conditions it needs to survive.

Everglades National park is among the most biologically diverse places in North America. This diversity includes numerous amounts of species: Plants, invertebrate animals, marine and freshwater fish, mammals, birds, reptiles and amphibians. The aquatic habitats range from offshore marine areas on the margins of the Gulf of Mexico to the shallow inshore waters of Florida Bay and brackish estuaries lining the coast; from the Shark River and Taylor sloughs to the tiny water worlds held in solution holes. The slough habitat is a slightly deeper channel in the limestone bedrock through which water flows in a nearly imperceptible stream; the Everglades has two sloughs, Taylor Slough and Shark River Slough. These sloughs are the main channels where the glades water flows in the park. They remain as reservoirs of water when the glades dry in the rainless season, they are important to the survival of aquatic animals; which in turn are able to continue the food chain.

Suggested Procedures:

Warm up

Discuss the concepts of the ecosystem, community, ecological niche, habitat, species and adaptation. Ask students to think of examples of each level of organization that they might know of or have studied. What is a typical terrestrial habitat that they know of, or have visited? What is a typical aquatic one? What species would they find there? Ask students if their school grounds have any of the concepts discussed. Ask students to make observations and interpretations of the school's natural environment.

Activity 1

- Go on an in-house field trip by walking through the school grounds observing and jotting down the plants and animals they see throughout their hike. Try to identify as many plants and animals seen by using background knowledge, a field guide or a digital device.
- In class discuss and interpret their observations and share any interesting thoughts, comments and/or ideas. Discuss adaptations that occur within the habitats that they observed.
- Tell students they will have a chance to design their own original creature that is adapted to its habitat. Divide the class into groups to work on: Where the creature will live, what it will eat and how it will move? What adaptations are necessary for their creature to survive?
- Using their list of adaptations, have the students draw and color their own original creature on construction paper.
- In conjunction with each drawing, have each student write a short report that includes: name, food source, habitat and adaptations.
- Have groups present their creature to the class.
- Ask students to imagine their creatures in a habitat different from the one identified in their report. What specific difficulties might the creature encounter in this new environment?
- To demonstrate their understanding of adaptation students' presentations will show appropriate facts and relevant, descriptive details that support their creatures habitats and needs for change in order to survive.

Activity 2

- The teacher will probe the students with critical level questions before watching the video, and as a group they can interact with the possible response to the questions; the teacher interacts and monitors the group's responses to the questions (Appendix A).
- Explain to the students that they will be watching a video about the slough habitat; ask students to use the **Common Freshwater Plants and Animals Checklist** (Appendix B) for any animals or plants seen in the video.
- Play the Slough video for the class located at the following web address, stopping and replaying the part of the video that discusses main idea points (time 7:57): <http://www.nps.gov/ever/photosmultimedia/mountainsandvalleys.htm>
- After watching the video and having used the checklist, teacher will probe students with critical level questions (Appendix A).
- Each student will select a total of two items from the checklist to research.
- Students will research information using 3 resources; and respond to scientific questions by citing evidence in support. This information will be gathered for a scientific report manual (Appendix C). The manual will be used for a classroom presentation and hardcover display.
- To demonstrate their understanding of the slough video students will apply concepts learned and have researched additional information for the final product of a scientific report manual.

Activity 3

- As a classroom project an Everglades' slough 3-dimensional model will be created; students can represent either Taylor Slough or Shark River Slough.
- Each student will use the information of the plant and/or animal they researched to create this display.
- Have students draw, use magazine cut-outs, clay and/or print-outs that will display their plant and/or animal to scale.
- Use a shallow container (e.g., box, wading pool), to display their plants and animals.
- Create teams that will be responsible for the arrangements of their assigned element (e.g., plants, animals, water)

- Ask each team to have a representative to present the information, their group arranged in the model, by identifying the plants, animals and other objects.

Extension: Display completed model in a school hallway; and ask students to become 'naturalists' and give interpretive tours to other classes.

Evaluation: Throughout the activities students will demonstrate their understanding by depicting an Everglades' slough habitat and the adaptations used.

Category	3	2	1
Species:	Includes many details that clearly described the species	Includes some details that clearly described the species	Includes no details that clearly described the species
Habitat:	Includes many details that clearly described the habitat	Includes some details that clearly described the habitat	Includes no details that clearly described the habitat
Type of adaptation:	Includes many details that clearly described the type of adaptation	Includes some details that clearly described the type of adaptation	Includes no details that clearly described the type of adaptation

Questions

Questions before Watching the Video

- I. ***What*** happens in a slough?
- II. ***What*** animals and plants live in a slough?
- III. ***How*** do animals and plants *adapt* to the slough(s)?
- IV. ***Explain*** how the plants and animals living in the slough impact the Everglades?

Questions after Watching the Video

- I. What ecological niche do plants and animals create in a slough?
- II. How does the alligator impact the Everglades ecosystem?
- III. With the ebb and flow *how* does the slough *change*?
- IV. ***Explain*** the importance of the slough?

Common Freshwater Plants and Animals – Checklist

Birds	Mammals	Fish	Amphibians & Reptiles	Insects & Other Invertebrates	Plants	Trees
Anhinga	Round-tailed muskrat	Florida gar	Pig frog	Florida tree snail	Common cattail	Bald cypress
Pied-bill grebe	Raccoon	Bowfin (mudfish)	Squirrel treefrog	Apple snail	Maidencane	Pond cypress
Tricolor heron	River otter	Eastern mosquito fish	Green treefrog	Mosquito	Sawgrass	Red mangrove (estuarine)
Great blue heron	Bobcat	Blue spotted sunfish	Green anole (chameleon)	Dragonfly	Swamp lily	Black mangrove (estuarine)
Wood stork	Marsh rabbit	Bluegill (bream)	Brown water snake	Giant water but	Spatterdock (yellow water lily)	Red by pond apple
Great egret	White-tailed deer	Largemouth bass	Green water snake	Water boatman		Sweet bay
Snowy egret	Manatee (estuarine)		Florida softshell turtle	crayfish		
Limpkin	Atlantic bottlenose dolphin (estuarine)		Florida redbelly turtle			
Snail kite			American alligator			
Purple gallinule						
Least bittern						

Scientific Report Manual

Information Profiler	
Name (URL)/Title:	
Sponsor/Publisher:	Date/Copyright:
Subject:	Expertise/Author:
Information	
Species:	Ecosystem:
Habitat:	Purpose of adaptation:
Type of adaptation:	Facts/Observations:

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